Concepts of Forest Habitat Restoration in the Cedar River Watershed

Gaps:
- **Forest Succession**
  - ☐ Simulate "shifting mosaic" dynamic of old-growth stage
- **Increase Structural Complexity**
  - ☐ Varied tree density at stand scale
  - ☐ Vary gap sizes
  - ☐ Encourage epicormic branching
- **Increase Species Diversity**
  - ☐ Increase sun energy to forest floor (stimulate growth of understory, benefit shade-intolerant species)

Snags:
- **Increase Structural Complexity**
  - ☐ Increase short-term numbers through active creation
  - ☐ Shorten time to naturally created large snags by increasing/maintaining tree growth and desired tree density
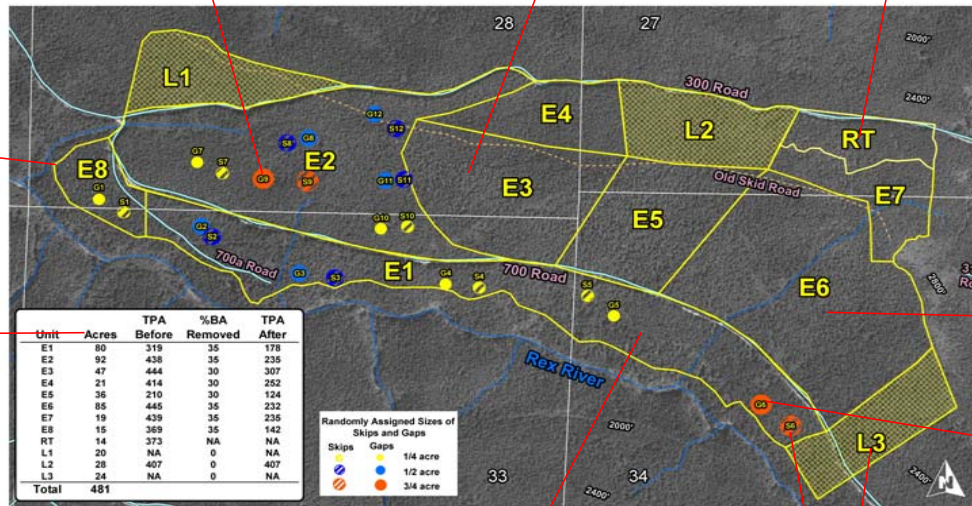
Restoration Thinning:
- **Forest Succession**
  - ☐ Maintain/increase tree growth and vigor
- **Increase Structural Complexity**
  - ☐ Variable density tree thinning
  - ☐ Vary prescription across project area
  - ☐ Vary treatment along streams
- **Increase Species Diversity**
  - ☐ Maintain less abundant species

Post-Thinning: 45 Rd Project

Pre-Thinning: Unit E7

e Selection and Prioritization:
- **Primary Forest Stand Criteria**
  - ☐ Provide stand-level forest characteristics that likely respond to thinning overstory trees (e.g., tree density, tree diameter, tree age, canopy closure)
  - ☐ Provide an opportunity to try various restoration prescriptions
- **Primary Landscape Criteria**
  - ☐ Lies within a mile of remnant old-growth forest improving the forest habitat connectivity within the watershed sub-basin
  - ☐ Begin an active effort to link old-growth forest habitat in the eastern and western portions of the watershed

Size of Treatment:
- **Landscape Effect**
  - ☐ Wildlife benefit
  - ☐ Sub-basin restoration
- **Planning Efficiency**

Unit	Acres	TPA Before	%BA Removed	TPA After
E1	80	319	35	178
E2	92	438	35	235
E3	47	444	30	307
E4	21	414	30	252
E5	36	210	30	124
E6	85	445	35	232
E7	19	439	35	235
E8	15	369	35	142
RT	14	373	NA	NA
L1	20	NA	0	NA
L2	28	407	0	407
L3	24	NA	0	NA
Total	**481**			

Randomly Assigned Sizes of Skips and Gaps

Skips	Gaps	
🔵	🔵	1/4 acre
🔵	🔵	1/2 acre
🟠	🟠	3/4 acre

700 Road Forest Restoration Project Area
Cedar River Watershed

T.22N, R.9E, WM

Seattle Public Utilities — Watershed Management Division

0 430 860 1,720 2,580 3,440
Feet

Pre-Thinning: Unit E2

Because of Uncertainty We Will:
- **Increase Heterogeneity and Variability**
  - ☐ Stand-level
  - ☐ Landscape-level
- **Try Different Strategies**
- **Remain Humble and Conservative**
- **Institute Benchmarking**
  - ☐ With other CRW-HCP projects
  - ☐ With other forest restoration research

Pre-Thinning: Unit E3

Ecological Thinning:
- **Forest Succession**
  - ☐ Maintain/increase tree growth and vigor
- **Increase Structural Complexity**
  - ☐ Variable density tree thinning
  - ☐ Vary prescription across project area
  - ☐ Encourage epicormic branching
  - ☐ Vary treatment along streams
- **Increase Species Diversity**
  - ☐ Maintain less abundant species
  - ☐ Increase sun energy to forest floor (stimulate growth of understory)

Skips and Leave Areas:
- **Increase Structural Complexity**
  - ☐ Maintained and varied tree density
  - ☐ Vary prescription across project area
- **Monitoring**
  - ☐ Comparison controls to help understand change

Downed Wood:
- **Increase Structural Complexity**
  - ☐ Increase short-term numbers through active creation
  - ☐ Shorten time to naturally created large downed wood by increasing/maintaining tree growth and desired tree density

Upland Planting:
- **Increase Species Diversity**
  - ☐ Plant less abundant species that contribute to ecosystem processes (e.g., tree, shrub, cryptogams, etc)
- **Increase Structural Complexity**
  - ☐ Encourage development of understory and canopy layering

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